

Investigations in the Field of Lactones and Lactams.

8. Report. ~~Preparation of Polyvinylpyrrolidone~~ with Protracted Action.

62-11-24/29

solution has higher advantages than such "in a block": 1) This process takes place at relatively lower temperature, 2) the product output becomes higher, 3) the polymeride developing is colourless and has no odour. In the physiological experiments at the 1. Moscow Institute for Medicine (reference 3) it was ascertained that the samples with a relative viscosity of a 3% aqueous solution of 3.7 to 4.0 are the most effective as "prolongator". The best sample showed a relative viscosity of 3.74, an osmotic pressure of 270 mm water column and an average molar weight of ~50 000. There are 1 table, 3 references, 1 of which is Slavic.

ASSOCIATION: Institute for Organic Chemistry imeni M.D. Zelinskiy of the AN USSR (~~Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR.~~)

SUBMITTED: June 21, 1957

AVAILABLE: Library of Congress.

Card 2/2

AUTHORS:

ZELINSKAYA, M.G.
Shostakovskiy, M.F., Sidel'kovskaya, F.F.,
Zelenskaya, K.G.

62-12-5/20

TITLE:

Investigations Carried out in the Fields of Lactones and Lactams
(Issledovaniye v oblasti laktonov i laktamov). Information 9. The
Synthesis of the Vinyllactams and Some of Their Properties
(Soobshcheniye 9. Sintez vinillaktamov i ikh nekotoryye svoystva).

PERIODICAL:

Izvestiya AN SSSR Otdeleniye Khimicheskikh Nauk, 1957, Nr 12,
pp. 1457-1464 (USSR)

ABSTRACT:

In publications dealing with chemical problems much attention has recently been paid to the synthesis and polymerization of nitrogen-containing vinyl compounds. Among these methods, there is the reaction of direct vinylization suggested by Favorskiy and Shostakovskiy, which was carried out with alcohols and phenols. Further working out of this reaction made it possible to synthesize a number of valuable preparations. The authors gave a report about the vinylization of lactams by using pyrrolidone, piperidone and capro-lactam as examples. The catalyzers of vinylization are alkaline salts of lactams. It was shown that the most simple method of preparing the salts is the direct interaction between lactams and alkaline metals. It was

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Investigations Carried out in the Fields of Lactones and Lactams. Information 9. The Synthesis of the Vinylactams and Some of Their Properties

62-12-5/20

further shown that vinylperidone as well as other vinyl lactams must be hydrolyzed in an acid medium. Optimum conditions of hydrolysis were found. The polymerization of vinyl lactams was carried out under the influence of dinitryl of azoisobutyric acid as well as under the influence of H_2O_2 in an aqueous solution. The authors then describe a simultaneous polymerization of the vinyl peridone with the methyl ester of methacrylic acid. There are 7 tables, and 17 references, 11 of which are Slavic.

ASSOCIATION: Institute for Organic Chemistry AN USSR imeni N.D.Zelinskiy (Institut organicheskoy khimii im. N.D.Zelinskogo Akademii nauk SSSR).

SUBMITTED: July 3, 1956

AVAILABLE: Library of Congress

Card 2/2 1. Lactones-Vinylization 2. Lactams-Vinylization 3. Alcohols
4. Phenols 5. Pyrrolidone

SIDEL'KOVSKAYA, F.P.; ZELINSKAYA, M.G.; MINAYINA, I.N.; SHOSTAKOVSKIY, M.F.

Lactones and lactams. Report No.24: Reactivity of β -pyrrolidony-
lethyl esters of acrylic acids. Izv. AN SSSR Ser. khim. no.11:
2061-2063 N '64 (MIRA 18:1)

1. Institut organicheskoy khimii im. N.D. Zelinskogo AN SSSR.

SHOSTAKOVSKIY, M.F.; SIDEL'KOVSKAYA, F.P.; AVETISYAN, A.A.; ZELENSKAYA,
M.G.; LOPATIN, B.V.

N-vinylthiopyrrolidone. Dokl. AN SSSR 153 no.5:1089-1092
D '63. (MIRA 17:1)

1. Institut organicheskoy khimii im. N.D. Zelinskogo
AN SSSR. 2. Chlen-korrespondent AN SSSR (for Shostakovskiy).

SHOSTAKOVSKIY, M.F.; ZELENSKAYA, M.G.; SIDEL'KOVSKAYA, F.P.; LOPATIN, B.V.

Lactones and lactams. Report No.22: N-acryloyl lactams.
Izv.AN SSSR.Otd.khim.nauk no.3:505-510 Mr '62. (MIRA 15:3)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.
(Lactams)

SIDEL'KOVSKAYA, F.P.; ZELENSKAYA, M.G.; SHOSTAKOVSKIY, M.F.

Acryloyl- and methacryloylpyrrolidinones. Zhur.ob.khim. 31
no.12:4060-4061 D '61. (MIRA 15:2)

1. Institut organicheskoy khimii imeni N.D.Zelinskogo AN SSSR.
(Acrylic acid)
(Methacrylic acid)
(Pyrrolidinone)

SIDEL'KOVSKAYA, F.P.; ZELENSKAYA, M.G.; SHOSTAKOVSKIY, M.F.; LOPATIN, B.V.

New esters of acrylic and methacrylic acids. Vysokom.sped. 4
no.3:389-392 Mr '62. (MIRA 15:3)

1. Institut organicheskoy khimii AN SSSR imeni N.D.Zelinskogo.
(Acrylic acid) (Methacrylic acid)

34991

S/190/62/004/003/011/023

B110: B144

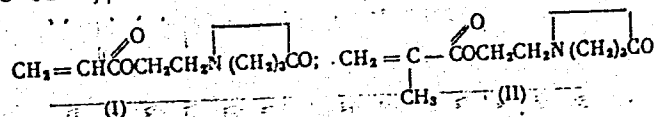
15.8070

15.0070
AUTHORS: Sidel'kovskaya, F. P., Zelenskaya, M. G., Shostakovskiy, M. F.,
Lopatin, B. V.

TITLE: New acrylic and methacrylic acid esters

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 4, no. 3, 1962, 389-392

TEXT: A synthesis of α,β -unsaturated esters with lactam rings



was developed to produce new monomers and polymers and to study the effect of the lactam ring on the acrylic ester double bond and on polymer properties. The lactam ring is introduced into saturated esters by the action of N-(β -hydroxyethyl)-pyrrolidone (P) on fatty acids or their acid chlorides. Esterification of acrylic and methacrylic acid (AA, MA) with P is more difficult than that of saturated acids. AA and MA chlorides and P form esters with < 55 % yields (optimum conditions; 1.5 hrs, 70°C, CHCl_3

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New acrylic and methacrylic acid esters

S/190/62/004/003/011/023
B110/B174

and CCl_4 as solvents, soda (or NH_3) to bind HCl) and sometimes additional small amounts of high-boiling products of unknown structure. The esters I and II are mobile liquids soluble in water, ethanol, methanol, acetone, and benzene, saponifiable in alkali, insoluble in ether and petroleum ether. They polymerize at 40°C , but withstand long-time storage at room temperature. IR spectra taken with an MKC-14 (IKS-14) spectrophotometer (NaCl prism) showed two carbonyl groups and one $=\text{CH}_2$ double bond. Solid polymers

insoluble in organic substances and water, are obtained with azoisobutyric acid dinitrile. With benzoyl peroxide, only polymers from I insoluble in organic substances and water, could be produced within 12 hrs at $80-82^\circ\text{C}$. There are 1 figure, 1 table, and 4 references: 1 Soviet and 3 non-Soviet. The most important reference to English-language publications reads as follows: G. N. Stempel et al. J. Amer. Chem. Soc., 72, 2299, 1950. ✓

ASSOCIATION: Institut organicheskoy khimii AN SSSR im. N. D. Zelinskogo
(Institute of Organic Chemistry AS USSR imeni N. D. Zelinskiy)

SUBMITTED: February 23, 1961

Card 2/2

31192

S/079/61/031/012/011/011
D204/D301

S.3610

1209

AUTHORS: Sidel'kovskaya, F. P., Zelenskaya, M. G., and Shostakovskiy, M. F.

TITLE: The preparation of acrylone - and methacrylone pyrrolidones

PERIODICAL: Zhurnal obshchey khimii, v. 31, no. 12, 1961, 4060 - 4061

TEXT: The work was carried out in view of the recent interest in the amides of acrylic and methacrylic acids as potential starting materials for the synthesis of new polymers. $\text{CH}_2 = \text{CH}.\text{CON}(\text{CH}_2)_3\text{CO}$

CH_3
(I) and $\text{CH}_2 = \overset{\text{CH}_3}{\underset{|}{\text{C}}}.\text{CON}(\text{CH}_2)_3\text{CO}$ (II) were prepared in 20 and 40% yields respectively by the action of the appropriate acid chlorides on Na pyrrolidone at $-10^\circ \rightarrow -15^\circ\text{C}$. Propyl gallate was used as an inhibitor and structures of the products were confirmed by infrared spectroscopy. Acrylone pyrrolidone (I) polymerizes very readily, forming a

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S/079/61/031/012/011/011
D204/D301

The preparation of acrylone ...

hard polymer, insoluble in water or organic solvents, during its preparation and distillation. Monomer (II) polymerizes in 20% yield on heating for 30 hours at 60°C, in the presence of 5% azo-iso-butyric dinitrile, to form a white powder (m.p. ~270°C) soluble in dimethyl formamide. Properties of the above two monomers and the preparation of acrylone and methacrylone lactams based on piperidone and caprolactam are now being investigated. X

ASSOCIATION: Institut organicheskoy khimii imeni N. D. Zelinskogo, Akademii nauk SSSR (Institute of Organic Chemistry im. N. D. Zelinskiy, Academy of Sciences USSR)

SUBMITTED: July 10, 1961

Card 2/2

SHOSTAKOVSKIY, M.F.; SIDEL'KOVSKAYA, F.P.; ZELENSKAYA, M.G.; SHKURINA, T.N.
OGIBINA, T.Ya.

Lactones and lactams. Report No.18; Reaction of vinyl lactams
with hydrogen chloride and alcohols. Izv.AN SSSR Otd.khim.nauk
no.3:482-487 Mr '61. (MIRA 14:4)

1. Institut organicheskoy khimii imeni N.D.Zelinskogo AN SSSR.
(Lactams)

SHOSTAKOVSKIY, M.F.; SIDEL'KOVSKAYA, F.P.; ZELENSKAYA, M.G.

Lactones and lactams. Reprot No.19: Synthesis of ethers and esters
of N-(β -hydroxyethyl)pyrrolidinone. Izv.AN SSSR.Otd.khim.nauk no.5:
910-913 My '61. (MIRA 14:5)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.
(Pyrrolidinone)

SIDEL'KOVSKAYA, F.P.; ZELENSKAYA, M.G.; SHOSTAKOVSKIY, M.F.

Lactones and lactams. Report No. 17: Dienophilic activity of
N-vinyl lactams and of the vinyl ether of N-(β -hydroxyethyl)
pyrrolidone. Izv. AN SSSR. Otd. khim.nauk no. 1:128-135 Ja '61.
(MIRA 14:2)

1. Institut organicheskoy khimii im. N.D. Zelinskogo AN SSSR.
(Lactams) (Ether) (Pyrrolidinone)

ZELENSKAYA, M. G.

5.3610.5.3100

T7022
SOV/62-59-12-26/A3

AUTHORS:

Shorygin, P. P., Shurina, T. N., Shostakovskiy, M. P.,
Sidel'nikovskaya, P. P., Zelenskaya, M. G.

TITLE:

Spectroscopic Investigation of N-Vinylactams and
Anilides

PERIODICAL:

Izvestiya Akademii nauk SSSR, Otdeleniye Khimicheskikh
nauk 1959, No 12, pp 2208-2212 (USSR)

ABSTRACT:

Spectra of N-vinylactams and anilides were studied, and the mutual influence of groups was investigated. Vinylactams contain the system $C=C-N-C=O$ of the vinylamide, to the interaction of atoms and groups in the molecule, to the first approximation, by considering the effect of the N-atom on $C=O$ and $C=C$ bonds, as well as the mutual interaction of the double bonds. Raman and UV-spectra of vinylpyrrolidone, vinylpiperidone, vinylcaprolactam, and of anilides (formanilide, acetanilide, etc.). and of simpler molecules containing an N-atom and a carbonyl group (pyrrolidone, N-butylpyrrolidone, caprolactam, dimethylacetamide) were taken. Spectrograph

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ISP-51 and PRK mercury lamp were used to obtain Raman spectra, and spectrograph SP-4 to obtain UV-spectra. Spectra of vinylactams in the double bonds region showed lines characteristic for $C=O$ and $C=C$ bonds. It was found that the presence of the N-atom in the double bond influenced considerably the spectral characteristics: the frequency of the $C=O$ bond was lowered nearly as values of the extinction coefficient ϵ $C=O$ bonds in vinylpiperidone and vinylpyrrolidone were quite high, and close to those of vinylamine. The intensity of $C=C$ line of vinylpyrrolidone was substantially higher, and that of $C=O$ line in all three vinylactams was many times higher than in compounds with $>N-C=O$ bonds. This anomaly in the intensity of the $C=O$ bond in Raman spectrum was the most peculiar characteristic of vinylactams and distinguished them from molecules with $C=O$ and $>N-C=O$ bonds. It can be explained by the influence of the $C=C$ bond, through the interaction of the carbonyl group (in the bond system $C=O-N-C=O$). Similar

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relationships were also observed in anilide spectra. It was noted that the alkylation of N in anilides weakened the indications of conjugation of N with the benzene ring, and strengthened those of conjugation with the carbonyl group. It can be assumed, therefore, that a $C_6H_5N(CO)R$ molecule loses the coplanarity of the system C_6H_5-N-C and the system $C-N-C=O$ becomes more planar. There are 3 tables: 1 figure; and 6 references, 1 U.S., 1 U.K., 1 German, 1 Soviet, The U.S. and U.K. references are: N. B. Zilinskaya, E. Braun, E. Jones, J. Chem. Soc., 1946, 948; E. Corey, J. Amer. Chem. Soc., 75, 2301 (1953).

ASSOCIATION:

M. D. Zelinskiiy Institute of Organic Chemistry, Academy
of Sciences, USSR (Institut organicheskoy khimii imeni
M. D. Zelinskogo Akademii nauk SSSR)

SUBMITTED:

April 7, 1959

Card 3/3

ZELENSKAYA, M. G.

5 (1)

AUTHORS:

Zhelezovskiy, M. P., Vasil'ev, P. D., Sorokina, L. O.,
Sidel'nikovskaya, P. P., Morgunova, Ye. S., Zelenaya, M. G.,
Oval'dova, N. N.

TITLE:

Investigation in the Field of Lactones and Lactams
(Isolomonye v oblasti laktonov i laktoimov). Communication
15. Preparations of polyvinylpyrrolidones having different
molecular weights and their physico-chemical properties
(Soobshcheniya 15. Preparaty polivinilpyrrolidona raznykh
molekulyarnykh vesa i ikh fiziko-khimicheskiye svoystva).

PERIODICAL:

Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk,
1959, Nr 5, pp 896-900 (USSR)

ABSTRACT:

"Block polymerization" of vinylpyrrolidone under the effect
of H_2O_2 and of dinitrate of molsolite acid, and polymerization
in aqueous solutions (Refs 3, 5) had been investigated at 40
in these solutions under association. In connection with it,
the physico-chemical properties of various preparations of
polyvinylpyrrolidone (PVP) were investigated in this work
because these properties are very important for the work
investigation of the biologic activity of the preparations.

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The preparations can be obtained in various ways: therefore,
they may exhibit slight deviations from their physico-
chemical characteristics. (Table 1: physico-chemical
characteristics of PVP solutions as products of various
conditions). The polymerization conditions for PVP from
aqueous solutions in the presence of 30 % H_2O_2 and with
0.3-0.5 % concentrations of this initiator are summarized in
Table 2. The physico-chemical characteristics of the
being used as a plasmasubstitute are shown in Table 3. Relative
viscosity, osmotic pressure, and the molecular weight of the
various preparations were determined. A comparison of the
characteristics shows that those of PVP are more effective
than those of the plasmasubstitute. 1.5 % H_2O_2 can be used
as initiator in order to obtain a highly effective polymer.

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The determination of the molecular weight and the
investigation of the polydispersity of several preparations
showed that the block polymers have a higher degree of
polydispersity than those obtained in solutions. Moreover,
a method for obtaining biologically active sterile salt water
solutions of the preparations has been worked out. There are
2 figures, 4 tables, and 21 references. 12 of them are
Soviet.

ABSTRACTED:

Institut organicheskoy khimii im. S. D. Zaimanovskogo
musk SSSR (Institute of Organic Chemistry, Acad. Sci.
USSR) Institute of the Academy of Sciences, USSR

SUBMITTED:

July 18, 1957

SHOSTAKOVSKIY, M.F.; SIDEL'KOVSKAYA, F.P.; ZELENSKAYA, M.G.

Investigations of lactones and lactams. Report No.13:Alkoxyethyl-
idenpyrrolidones. Izv.AN SSSR.Otd.khim.nauk no.3:516-520
Nr '59. (MIRA 12:5)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.
(Pyrrolidinone)

5(3)

AUTHORS:

Shostakovskiy, M. F., Sidel'kovskaya, F. P., Zelenskaya, M. G. SOV/62-59-4-29/42

TITLE:

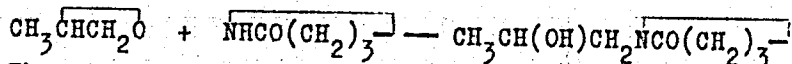
Reaction of Propylene Oxide With α -Pyrrolidone (Reaktsiya okisi propilena s α -pirrolidonom)

PERIODICAL:

Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1959, Nr 4, pp 738-740 (USSR)

ABSTRACT:

This is a brief report on the investigation of the reaction of α -pyrrolidone with propylene oxide. In this case the oxido ring opens in a way so that a secondary alcohol is formed:



The structure of the N-(β -oxypropyl) α -pyrrolidone obtained was proved by the synthesis of γ -butyrolactone and amino-isopropanol. The aminoisopropanol required was obtained from ammonia and propylene oxide (Ref 3). Upon interaction of N-(β -oxypropyl) α -pyrrolidone with thionyl chloride the hydroxyl group was substituted by chlorine and N-(β -chloropropyl) α -pyrrolidone obtained. Upon heating with aqueous alkali this chloride is hydrolyzed (Table),

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Reaction of Propylene Oxide With α -Pyrrolidone

SOV/62-59-4-29/42

although, more slowly than the N-(chloromethyl) α -pyrrolidone obtained earlier (Ref 4) which saponifies quantitatively at room temperature even in the absence of alkali. Upon heating of N-(β -chloropropyl) α -pyrrolidone with caustic potash in benzene solution, HCl was separated and N-(propenyl) α -pyrrolidone formed. The position of the double bond was determined by spectroscopy. This investigation was carried out by T. N. Shkurina. There are 1 table and 6 references, 3 of which are Soviet.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy of the Academy of Sciences, USSR)

SUBMITTED: July 24, 1958

Card 2/2

5(3)
AUTHORS: Sidel'kovskaya, F. P., Zelenskaya, M. G., SOV/62-59-5-21/40
Shostakovskiy, M. F.

TITLE: Investigation in the Field of Lactones and Lactams
(Issledovaniye v oblasti laktonov i laktamov).
Report 16. N-Methylol-lactames (Soobshcheniye 16.
N-Metilollaktamy)

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk,
1959, Nr 5, pp 901-903 (USSR)

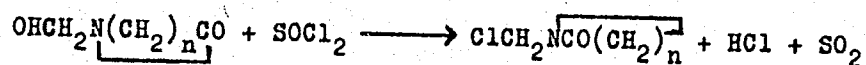
ABSTRACT: In this paper the synthesis of N-methylol-lactames of the
following structure was investigated: Methylol pyrrolidone (I)
 $(\text{CH}_2)_3\text{CONCH}_2\text{OH}$ and N-methylol caprolactame (II) $(\text{CH}_2)_5\text{CONCH}_2\text{OH}$,
and some of their properties were determined. The authors of
the present paper showed in a previous one that in the case
of an action of a 30 % formaldehyde solution upon pyrrolidone
and caprolactame the following is produced in an alkali
medium with a yield of 70 - 90 % (I) and (II):

$$\text{-(CH}_2\text{)}_n\text{CONH} + \text{CH}_2\text{O} \xrightarrow{\text{OH}^-} \text{-(CH}_2\text{)}_n\text{CONCH}_2\text{OH (Ref 3).}$$

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Investigation in the Field of Lactones and Lactames . SOV/62-59-5-21/40
Report 16. N-Methylol-lactames

This scheme is to be proved. For this purpose, the reaction of these compounds with thionylchloride



was investigated, and the compounds N-chloromethyl pyrrolidine and N-chloromethyl caprolactame were obtained with a yield of ~80 %. The chlorine content of these compounds was determined by titration according to the method developed by Volhardt (table), and it was shown that the chlorine atom in these compounds is easily saponified. Both synthesis and investigation are described separately in the experimental. There are 1 table and 6 references, 2 of which are Soviet.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy of the Academy of Sciences, USSR)

SUBMITTED: July 26, 1957
Card 2/2

SIDEL'KOVSKAYA, F.P.; ZELENSKAYA, M.G.; SHOSTAKOVSKIY, M.F.

Lactones and lactams. Report No.12: Vinyl ether of
N-(β -oxyethyl)pyrrolidinone. AN SSSR. Otd. khim. nauk no.9:1111-1118
S '58. (MIRA 11:10)

1. Institut organicheskoy khimii imeni N.D. Zelinskogo AN SSSR.
(Pyrrolidinone)

5(3)

AUTHORS:

Shostakovskiy, M. F., Sidel'kovskaya, F. P., Zelenskaya, M. G. SOV/62-59-3-20/37

TITLE:

Investigation in the Field of Lactones and Lactams (Issledovaniye v oblasti laktonov i laktamov). Communication 13. Alkoxyethylidene-pyrrolidones (Soobshcheniye 13. Alkoksietilidenpirrolidony)

PERIODICAL:

Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1959, Nr 3, pp 516-520 (USSR)

ABSTRACT:

In order to obtain vinylpyrrolidone, in the present paper alkoxyethylidene-pyrrolidones were synthesized and their thermal decomposition investigated. Several methods of synthesis were applied: The interaction of vinylalkylethers with pyrrolidone, the reaction of vinylpyrrolidone with alcohol and the reaction of the α -chloroethylalkylether with pyrrolidone. The best results were obtained in the reaction of pyrrolidone with α -chloroethylalkylether. The character and the yield of the resulting products chiefly depend on the reaction conditions, especially on temperature and initial components (Table). A lower temperature and excess pyrrolidone favor the formation of pyrrolidone hydrochloride (Experiments 1,3,4).

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Investigation in the Field of Lactones and Lactams.
Communication 13. Alkoxyethylidene-pyrrolidones

SOV/62-59-3-20/37

An increase in temperature up to 85° provides a good yield of ethylidene-bis-N-N'-pyrrolidone (Experiments 6,10). Experiment 2 shows optimum conditions for the formation of butoxyethylidene pyrrolidone and experiment 9 for the formation of isopropoxyethylidene pyrrolidone. The most comfortable method of synthesis of alkoxyethylidene pyrrolidones as well as of alkoxyethylidene caprolactams is the interaction of α -chloroethylalkylethers with lactams. This reaction, however, exhibits a number of peculiar features for pyrrolidone. The yield of alkoxyethylidene pyrrolidones, for instance, is small, further, in addition to them ethylidene-bis-N-N'-pyrrolidone is always formed. Certain differences may be observed also on the thermal decomposition of these two compounds. On thermal decomposition of alkoxyethylidene caprolactams vinylcaprolactam is obtained in high yield (70-80 %). On the other hand it is not always possible to obtain vinylpyrrolidone on decomposition of alkoxyethylidene pyrrolidones. On decomposition of butoxyethylidene pyrrolidone vinylpyrrolidone in a ~40 % yield and butanol were obtained. On decomposition of isopropoxyethylidene-pyrrolidone isopropyl alcohol, pyrrolidone, and ethylidene-

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Investigation in the Field of Lactones and Lactams.
Communication 13. Alkoxyethylidene-pyrrolidones

SOV/62-59-3-20/37

-bis-N-N'-pyrrolidone were separated. The thermal decomposition of ethylidene-bis-N-N'-pyrrolidone takes place at considerably higher temperature than the decomposition of alkoxyethylidene lactams. As result of this decomposition pyrrolidone and a resinous residue were separated. There are 1 table and 8 references, 5 of which are Soviet.

ASSOCIATION: Institut organicheskoy khimii im. M. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy of the Academy of Sciences, USSR)

SUBMITTED: June 21, 1957

Card 3/3

AUTHORS: Sidel'kovskaya, F. P., Zelenskaya, M. G., SOV/62-58-9-15/26
Shostakovskiy, M. F.

TITLE: Studies in the Field of Lactones and Lactams (Issledovaniye
v oblasti laktonov i laktamov) Communication 12: Vinyl
Ether of N-(β -Oxyethyl)Pyrrolidone (Soobshcheniye 12.
Vinilovyy efir N-(β -oksietil)pirrolidona)

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk,
1958, Nr 9, pp 1111 - 1118 (USSR)

ABSTRACT: During the last year various nitrogen-containing vinyl
compounds with remarkable properties were synthesized.
The authors of this paper attempted to prepare the
vinyl ether of N-(β -oxyethyl) lactam in order to study
its properties and in order to compare the properties
of the vinyl ethers of N-substituted β -ethanolamine with
those of the vinyl lactams. The vinyl ether of N-(β -oxy-
ethyl) pyrrolidone was synthesized. In addition the
authors investigated the reaction between δ -valerolactone
and ethanolamine at 200° C. Under the reaction conditions
the 6-membered ring apparently opens. Using the example

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Studies in the Field of Lactones and Lactams.
Communication 12: Vinyl Ether of N-(β -Oxyethyl)Pyrrolidone

SOV/62-58-9-15/26

of the reaction of the compound with butanol it was shown that the vinyl ether of N-(β -oxyethyl)pyrrolidone combines with alcohols. Di-N-(ethylpyrrolidonyl)acetal and butyl-N-(ethylpyrrolidonyl) acetal were isolated. The thermal decomposition of butyl-N-(ethylpyrrolidonyl) acetal was investigated. It was shown that the vinyl ether of N-(β -oxyethyl)pyrrolidone combines with hydrogen chloride. The product formed is unstable and upon standing is transformed into the chlorohydrate of N-(β -oxyethyl)pyrrolidone. It was found that the vinyl ether of N-(β -oxyethyl)pyrrolidone polymerizes under the influence of the dinitrile of isobutyric acid vapor and hydrogen peroxide. It tends to polymerize thermally, but in the presence of 0,2% benzoyl peroxide (at 60° C) it does not polymerize. There are 2 tables and 9 references, 6 of which are Soviet.

ASSOCIATION: Institut organicheskoy khimii im.N.D.Zelinskogo Akademii nauk
SSSR (Institute of Organic Chemistry imeni N.D.Zelinskiy, AS USSR)

Card 2/3

SHAPIRO, S.Ye.; KONSTANTINOV, A.A.; ZELENSKAYA, M.I.; CHAPOVSKAYA, L.G.;
STAROSTINA, I.S.

Clinical and immunobiochemical parallels in typhoid-paratyphoid patients. Report No. 1: Effect of the severity of the course, the type of pathogen and the age factor on the protein composition of the blood serum of typhoid-paratyphoid patients. Trudy Khab.med. inst. no.20:38-42 '60. (MIRA 15:10)

1. Iz kliniki infektsionnykh bolezney (zav. dotsent S.Ye.Shapiro) Khabarovskogo meditsinskogo instituta i biokhimicheskoy laboratorii (zav. dotsent A.A.Konstantinov) Khabarovskogo nauchno-issledovatel'skogo instituta epidemiologii i gigiyeny (dir. A.M.Krupnikova).
(BLOOD PROTEINS) (TYPHOID FEVER) (PARATYPHOID FEVER)

LENKINA, M.S.; SHAPIRO, S.Ye.; ZELENSKAYA, M.I.; KULUSHEVA, N.K.

Characteristics of the isolation of bacteriophage in typhoid and paratyphoid patients in a light clinical course of the disease and treatment with antibiotics. Zhur.mikrobiol., epid. i immun. 40 no.12:115-116 D '63. (MIRA 17:12)

1. Iz Khabarovskogo instituta epidemiologii i mikrobiologii i kliniki infeksionnykh bolezney Khabarovskogo meditsinskogo instituta.

KONSTANTINOV, A.A.; SHAPIRO, S.Ye.; STAROSTINA, I.S.; CHAPOVSKAYA, L.G.;
ZELENSKAYA, M.I.

Clinical and immunobiochemical parallels in typhoid-paratyphoid patients. Report No. 2: Effect of antibiotic therapy on the protein composition of the blood serum and Widal's reaction; the interrelation between Widal's reaction and the individual blood serum protein fractions. Trudy Khab.med.inst. no.20:43-48 '60.
(MIRA 15:10)

1. Iz kliniki infektsionnykh bolezney (zav. dotsent S.Ye.Shapiro)
Khabarovskogo meditsinskogo instituta i biokhimicheskoy laboratorii
(zav. dotsent A.A.Konstantinov) Khabarovskogo nauchno-issledovatel'-
skogo instituta epidemiologii i gigiyeny (dir. A.M.Krupnikova).
(BLOOD PROTEINS) (ANTIBIOTICS) (TYPHOID FEVER)

GIDALEVICH, M. G.; DUL'NEVA, I. P.; ZASLAVSKIY, A. S.; UL'YANKIN, M. G.;
Prinimali uchastiye: ZELENSKAYA, M. I.; SHCHELOKOVA, I. M.;
DANILOV, M. A.; SHVETS, A. G.

Investigating the efficiency of grape washing. Trudy MNIIPP 1:
39-44 '61. (MIRA 16:1)

(Moldavia—Grape juice)

ZELENSKAYA, M.I.

Use of the cherry stemming machine as grape stemmer. Kons.
i ov. prom. 18 no.8:13-14 Ag '63. (MIRA 16:8)

1. Moldavskiy nauchno-issledovatel'skiy institut pishchevoy
promyshlennosti.
(Moldavia--Canning industry--Equipment and supplies)

POPOVSKIY, V. G.; GIDALEVICH, M. G.; DUL'NEVA, I. P.; ZASLAVSKIY, A. S.;
Prinimali uchastiye: UL'YANKIN, M. G.; ZELENSKAYA, M. I.;
SHCHELOKOVA, I. M.; DANILOV, M. A.; SHVETS, A. T.

Improving the technology of grape juice manufacture. Trudy
MNIIPP 1:9-37 '61. (MIRA 16:1)

(Moldavia—Grape juice)

ZELENSKAYA, M.I.

SHAPIRO, S.Ye.; KALMYKOVA, A.D.; KLIMENKO, O.I.; ZELENSKAYA, M.I.; TIMOFEYeva,
A.A.; GARBuzov, M.M.

Incidence of tularemia in Khabarovsk region. Zhur.mikrobiol.epid. 1
immun. 29 no.2:21-24 F '58. (MIRA 11:4)

1. Iz kliniki infektsionnykh bolezney Khabarovskogo meditsinskogo
instituta i Khabarovskoy protivochumnoy stantsii.
(TULAREMIA, epidemiology,
in Russia (Rus))

ZELENSKAYA, M. I.

USSR / Microbiology. Microbes Pathogenic to Man
and Animals. Tularemia Microbe.

F

Abs Jour : Ref. Zhur - Biol., No. 21, 1958, No. 95187
Author : Shapiro, S. Ye.; Kalmykova, A.D.; Klimenko,
O. I.; Zelenskaya, M.I.; Timofeyeva, A.A.;
Garbuzov, M. M.
Inst : -
Title : On Tularemic Diseases in the Region of
Khabarovsk.
Orig Pub : Zh. mikrobiol., epidemiol. i immunobiol.,
1958, No. 2, 21-24
Abstract : No abstract.

Card 1/1

CHERNYSKAYA, M. I., SHAPIRO, S. E., MIKHAILOVA, I. M.

"On the epidemiological characteristic of hemorrhagic fever with a renal syndrome in Khabarovsk and its outskirts." p. 126.

Easyatoye soveshchaniye po parazitologicheskim problemam i prirodnoochagovym bolezniam. 22-29 Okt'yabrya 1959 g. (Tenth Conference on Parasitological Problems and Diseases with Natural Foci 22-29 October 1959), Moscow-Leningrad, 1959, Academy of Medical Sciences USSR and Academy of Sciences USSR, No. 1 254pp.

SHAPIRO, S.Ye., dotsent; KONSTANTINOV, A.A., dotsent; ZHDANOV, I.S., kand.
med.nauk; ZELENSKAYA, M.I., kand.med.nauk

Data of clinical, epidemiological, and biochemical studies on
hemorrhagic nephrosonephritis. Sov.med. 25 no.1:64-70 Ja '61.
(MIRA 14:3)

1. Iz Khabarovskogo instituta epidemiologii i mikrobiologii
(direktor A.M.Krupnikova) i kliniki infektsionnykh bolezney (zav.-
dotsent S.Ye. Shapiro) Meditsinskogo instituta (direktor - prof.
S.K.Nechepayev).

(EPIDEMIC HEMORRHAGIC FEVER)

ZELENSKAYA, M. I.

"Clinical-anatomical characteristics of typhoid. Based on material from the clinic of infectious diseases, Khabarovsk Medical Inst." Khabarovsk-State Medical Inst. Khabarovsk, 1955. (Dissertations for the Degree of Candidate in Medical Science)

So: Knizhaya letopis', No. 16, 1956

GIDALEVICH, M.O.; ZELENSKAYA, M.I.

Production of clarified grape juice by the simplified
technology with the use of refrigeration. Trudy VNIIPP
5:32-36 '64. (MIRA 19:1)

YEPIFANOV, P.V.; YEROFEYEV, A.A.; ZELENSKAYA, M.I.

Removal of excess potassium bitartrate in the grape juice
flow. Trudy MNIIPP 5:47-50 '64.

(MIRA 19:1)

LADYZHANSKIY, I.A.; POPOVSKIY, V.G.; GASYUK, G.N.; DUL'NEVA, I.P.;
ZELENSKAYA, M.I.

Economic efficiency of using the simplified technology in
grape juice production. Trudy MNIIPP 5:91-96 '64.
(MIRA 19:1)

L 27618-66 EWT(1)/T JK

ACC NR: AP6018418

SOURCE CODE: UR/0240/65/000/012/0090/0091

AUTHOR: Shapiro, S. Ye.; Zelenskaya, M. I. 26
B

ORG: Clinic of Infectious Diseases, Khabarovsk Medical Institute (Klinika infektsion-
nykh bolezney Khabarovskogo meditsinskogo instituta)

TITLE: Cases of botulism in the Khabarovsk region

SOURCE: Gigiyena i sanitariya, no. 12, 1965, 90-91

TOPIC TAGS: botulism, therapeutics, serum, epidemiology

ABSTRACT: The author presents case histories of inhabitants of the Khabarovsk region who contracted botulism following consumption of fish products infected with *Cl. botulinum*. The illness was in all cases traced to persons who fished for chum and pike for personal consumption as well as for market sale to others. These cases had either a lethal outcome or resulted in intestinal paresis, diplopia, accommodation paresis. Treatment consisted of the administration of antibotulin serum (type A and B) combined with transfusion of blood plasma, saline solutions, and other means of pathogenetic therapy. Bacteriological analysis of the remains of chum and pike confirmed the presence of *Cl. botulinum*. Thus, epidemiological observations indicate that the region of Khabarovsk adjoining the Amur River is unfavorable from the standpoint of botulism. The sources of this food poisoning were chum and pike, i.e. fish

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UDC: 616.981.553-036.24(571.62)

L 27618-66

ACC NR: AP6018418

species whose epidemiological role has not so far been satisfactorily elucidated. It must be emphasized that the danger of infection with botulism in Khabarovsk is harbored chiefly in the consumption of home-processed (cured) fish products. [JPRS]

SUB CODE: 06 / SUM DATE: 26Dec64 / ORIG REF: 002

Card 2/2 CC

KORZHEV, A.A., inzh.; ZELENSKAYA, M.L., inzh.; FEDOSEYEV, R.G., inzh.

Safety measures in using radioisotopes. Bezop.truda v prom.
(3 no.4:15-17 Ap '59. (MIRA 12:6)
(Radioisotopes--Safety measures)

ORLOVSKIY, Kirill Prokof'yevich, ZELENSKAYA, H.I.

["Every collective farm can be like this] "Takim mozhet stat'
kazhdyi kolkhoz". Rostov-na-Donu, 1956. 11 p. (MIRA 11:10)
(Collective farms)

ZELEŇSKAYA, N.O.; BRIGADIROV, N.G.; BLINOV, A.I., tekhnicheskiiy redaktor.

[Origin of man; material to aid the dissemination of scientific information among the rural population] 'r'piskhozhdēnie cheloveka; 'materialy v pomoshch' estestvenno-nauchnoi propagande sredi sel'skogo naseleniia. Rosto-na-Donu, 1956. 15 p.

(MLRA 10:6)

1. Rostov on the Don, Gosudarstvennaya nauchnaya biblioteka.
(Bibliography--Man--Origin)

ACCESSION NR: AP4042968

S/0048/64/028/007/1220/1228

AUTHOR: Zelenskaya, N.S.; Smirnov, Yu.F.

TITLE: Concerning some features of the quasielastic nucleon and deuteron knock-out reactions on 1d-2s shell nuclei [Report, 14th Annual Conference on Nuclear Spectroscopy held in Tbilisi 14-21 Feb 1964]

SOURCE: AN SSSR. Izv. Seriya fizicheskaya, v.28, no.7, 1964, 1220-1228

TOPIC TAGS: nuclear reaction, proton reaction

ABSTRACT: In order to obtain information concerning direct knock-out reactions of 1d-2s shell nuclei between O^{16} and Ca^{40} , the cross sections for the following reactions were calculated: $Mg^{24}(p,2p)Na^{23}$, $Si^{28}(p,2p)Al^{27}$ and $Mg^{24}(p,pd)Na^{22}$. The calculations were performed with the unified model in the momentum approximation with the use of plane waves. The reduced nucleon widths were taken from the work of S. Yoshida (Prog.Theoret.Phys.12,141,1954). The results are presented graphically and are discussed. As a function of incident proton energy, the cross section for the (p,2p) reaction shows a number of well separated maxima. These are due primarily to the difference between the longitudinal and transverse frequencies in these deform-

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ACCESSION NR: AP4042968

ed nuclei, which also gives rise to the splitting of the giant dipole resonance. Pairing forces also contribute, however, and the effect is marked in Si^{28} as well as in Mg^{24} . The cross section depends strongly on the angle between the two scattered protons, but the maxima are still clearly separated when the cross section is averaged over the angle. The proton momentum distribution is rather complex because of interference between oscillator states with different l . The effective number of deuterons in Mg^{24} was found to be approximately 0.5. This is considerably less than in p-shell nuclei. The (p,pd) cross section depends more strongly on the angle than does the (p,2p) cross section; this is due to the fact that the deuteron wave function is not a harmonic oscillator eigenfunction. As a function of the incident proton energy, the cross section shows a number of peaks which, however, are not so well separated as those of the (p,2p) cross section. The probabilities were calculated for the excitation of a number of odd parity states of O^{16} by the $\text{O}^{17}(\text{p,pn})\text{O}^{16}$ reaction. Not only are the probabilities for the excitation of the odd levels of the giant dipole resonance quite different than in the case of excitation by photon absorption, but many other odd states are strongly excited. It is noted that many states can be excited and investigated by means of direct knock-out reactions that it would be difficult to excite otherwise, and it is suggested in particular that

ACCESSION NR: AP4042968

the unstable Be^8 nucleus might be investigated by means of the $\text{Be}^7(p,n)\text{Be}^6$ reaction. "In conclusion, the authors consider it their pleasant duty to express their gratitude to V.G.Neudachin for discussing the work and for valuable advice."

ASSOCIATION: Nauchno-issledovatel'skiy institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta (Scientific Research Institute of Nuclear Physics, Moscow State University)

SUBMITTED: 00

ENCL: 00

SUB CODE: NP

NR REF SOV: 006

OTHER: 013

3/3

ZELENSKAYA, N. S.; SMIRNOV, Yu. F.; YUDIN, N. P.

"The Stopping Absorption of π^- Mesons in C^{12} ."

report submitted for All-Union Conf on Nuclear Spectroscopy, Tbilisi, 14-22
Feb 64.

MGU (Moscow State Univ)

31790
S/056/61/041/006/040/054
B109/B102

24.2200 (1144, 115-8)

AUTHORS: Zelenskaya, N. S., Shirokov, Yu. M.

TITLE: Relativistic corrections to the magnetic moments of H^3 and He^3

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 41, no. 6(12), 1961, 1934-1937

TEXT: A general expression is derived for the relativistic corrections to the nuclear magnetic moments arising as a result of non-Galilean relativistic corrections to the Hamiltonian of nucleon-nucleon interaction. According to F. A. Zhivopistsev, A. I. Perelomov, and Yu. M. Shirokov (ZhETF, 36, 478, 1959), the non-Galilean correction to nucleon-nucleon interaction has the form

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Relativistic corrections to the ...

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S/056/61/041/006/040/054
B109/B102

$$H'_{mn} = \frac{1}{8M^2} \left\{ -H_{mn} p^2 + i \left(p \frac{\partial H_{mn}}{\partial x} \right) \left(p \frac{\partial}{\partial p} \right) - \right. \\ \left. - (\sigma_m - \sigma_n) \left[p \frac{\partial H_{mn}}{\partial x} \right] - i (\sigma_m - \sigma_n) H_{mn} [pP] + \right. \\ \left. + i H_{mn} (\sigma_m - \sigma_n) [pP] - \left(p \frac{\partial H_{mn}}{\partial p} \right) (pP) + i P_i P_j \frac{\partial^2 H_{mn}}{\partial x_i \partial p_j} \right\} \quad (2),$$

$$P = p_m + p_n, \quad p = \frac{1}{2}(p_m - p_n), \quad x = x_m - x_n.$$

where H_{mn} denotes the interaction energy of the m-th and n-th nucleons. The operator of the non-Galilean relativistic correction to the nuclear magnetic moment is obtained from (2) as

$$\Delta \mu = \frac{1}{16M^2} \left\{ 2H_{mn} (e_m + e_n) [n(r-R)] P - \right. \\ \left. - (e_m + e_n)(\sigma_m - \sigma_n) \left[n \left((r-R) \frac{\partial H_{mn}}{\partial r} \right) - (r-R) \left(n \frac{\partial H_{mn}}{\partial r} \right) \right] \right\}. \quad (3).$$

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Relativistic corrections to the ...

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8/056/61/041/006/040/054
B109/B102

(3) has been calculated for the $^2S_{1/2}$ state of mirror nuclei by using the wave function of the harmonic oscillator and the expression $H_{mn} = (W + MP_x + BP_\sigma + AP_x P_\sigma) V(r)$ ($V(r)$ - Gauss or Yukawa potential). The results are shown in a table. Conclusions: A) The relativistic non-Galilean correction exceeds considerably the correction of the spin-orbital interaction; B) the correction terms have the correct sign; the maximum value of 0.086 explains only 30% of the discrepancy between theoretical and experimental values. The difference is attributed to the effect of exchange mesons, which has been discussed by S. D. Drell and J. D. Walecka (Phys. Rev., 120, 1069, 1960). There are 1 table and 13 references: 4 Soviet and 9 non-Soviet. The four most recent references to English-language publications read as follows: L. D. Rearlstein, J. C. Tang, K. Wildermuth. Nucl. Phys., 18, 23, 1960; A. C. Butcher, J. M. Mc Namee. Proc. Phys. Soc., 74, 529, 1959; R. A. Ferrel, W. M. Visscher, Phys. Rev., 102, 450, 1956; J. M. Berger. Phys. Rev., 115, 223, 1959.

Card 3/4

Relativistic corrections to the...

31790
S/056/61/041/006/040/054
B109/B102

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: July 12, 1961

Legend to the Table: (1) shape and parameter of $V(r)$ (V_0 is given in Mev and a in 10^{-13} cm); (2) Gauss potential; (3) Yukawa potential.

Форма и параметры $V(r)$ (V_0 в MeV, a в 10^{-13} см)	$W=H=0, B=K=0$		$W=0,222, H=0,58, B=0,222, K=0,022$	
	$\Delta\mu(H^+)$	$\Delta\mu(He^+)$	$\Delta\mu(H^+)$	$\Delta\mu(He^+)$
Гауссовский потенциал (2)				
$V_0=51,9, a=1,73$ [8]	0	-0,048	0,014	-0,014
$V_0=45, a=1,94$ [9]	0	-0,032	0,009	-0,009
$V_0=68,8, a=1,55$ [10]	0	-0,018	0,005	-0,005
Потенциал Юкава (3)				
$V_0=68, a=1,17$ [11]	0	-0,086	0,026	-0,026
$V_0=46,48, a=1,184$ [12]	0	-0,056	0,017	-0,017

Card 4/4

L 13173-66

ENT(m)/EWA(h)

ACC NR: AP6001147

SOURCE CODE: UR/0347'65/002/003/0427/0432

AUTHOR: Zelenskaya, N. S.; Mayling, L.; Neudachin, V. G.; Smirnov, Yu. F. 26

ORG: Nuclear Physics Institute, Moscow State University (Institut yadernoy fiziki moskovskogo gosudarstvennogo universiteta)

TITLE: Selection rules for ^{19,44,55}nuclear reactions involving nucleon associations in the SU(3) scheme

SOURCE: Yadernaya fizika, v. 2, no. 3, 1966, 427-432

TOPIC TAGS: nuclear reaction, nucleon interaction, selection rule, quantum number, radioactive decay scheme, alpha particle, alpha decay

ABSTRACT: The authors examine selection rules according to approximate models of quantum numbers in the SU(3) scheme. Selection rules are formulated for nuclear reactions involving associations according to quantum numbers in the SU(3) scheme, widely used in light nuclei spectroscopy. It is shown that these selection rules in some cases lead to very rigid restrictions, which makes it easy to check them experimentally. For example, the reaction of quasi-elastic knock-out of an Alpha-particle from the nucleus O^{16} by a fast particle a : $O^{16}(a, a\alpha)C^*$, accompanied by α -decay of $C^{12*} \rightarrow 3\alpha$, is possible only through the ~ 12 -MeV level $|1s^4, 1p^8 [444] 4^+ \rangle$ of the nucleus C^{12} . Furthermore, in the stripping reactions $O^{16}(Li^8, d)Ne^{20*}$ the only levels of the configuration $(1d-2s)^4$ which can be excited are those of the lowest rotational series $0^+, 2^+, \dots$, based on the ground state of Ne^{20} .

Card 1/2

L 13173-66

ACC NR: AP6001147

Orig. art. has: 6 formulas.

SUB CODE: 18/ SUBM DATE: 23Mar66/ ORIG REF: 004/ OTH REF: 010

Card

2/2

L 41294-66 EWT(m)/EWP(t)/ETI IJF(c) JD/JG

ACC NR: AP6019619

SOURCE CODE: UR/0048/66/030/002/0278/0284

AUTHOR: Zelenskaya, N.S.; Smirnov, Yu.F.

ORG: Scientific Research Institute of Nuclear Physics, Moscow State University im. M.V.Lomonosov (Nauchno-issledovatel'skiy institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta)

TITLE: On taking into account spin-dependent effects in quasi-elastic knockout reactions /Report, Fifteenth Annual Conference on Nuclear Spectroscopy and Nuclear Structure, held at Minsk, 25 January to 2 February 1965/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no. 2, 1966, 278-284

TOPIC TAGS: ¹²~~nuclear reaction~~, nuclear spin, spin orbit coupling, ~~knockout reaction~~, impulse approximation, ~~spin dependent forces~~

ABSTRACT: The impulse approximation calculations of V.V.Balashov, A.N.Boyarkina, and I.Rottor (Nucl. Phys., 59, 417 (1964)) and P.Beregi, N.S.Zelenskaya, V.G.Noudachin, and Yu.F.Smirnov (Nucl. Phys., 66, 513 (1965)) of the cross section of the quasi-elastic knockout reaction (a,ax) have been generalized to take into account the spin-dependent terms in the interaction between the incident particle a and the knocked out particle or cluster X. The tensor forces between a and X are neglected, but the central forces, the spin-orbital coupling, and the spin-spin

Card 1/2

L 41296-66

ACC NR: AP6019319

interaction are taken into account. The spin-dependent factor in the expression for the cross section is simplified for the case in which the spin of the incident particle a is $1/2$, and expressions are given for the cross section and for the polarizations of the scattered particle a and the knocked out cluster X (in the impulse approximation the recoil nucleus is not polarized. When the spin of the knocked out cluster X is 0 or $1/2$ the correction to the cross section (with the tensor forces neglected) is rigorously zero. Computations for specific cases, in particular for the $Li(p,pd)$ reaction, showed that the spin corrections to the cross section are small and that the formulas derived in the references cited above without taking spin into account are adequate. It is suggested that measurements of the polarizations of knockout reaction products might provide information on the structure of the target nucleus, and that measurements of the polarization of the recoil nucleus might give an indication as to the limits of validity of the impulse approximation. The authors thank V.G. Neudachin for discussions and valuable remarks. Orig. art. has: 35 formulas.

SUB CODE: 20

SUBM DATE: 00

ORIG. REF: 002

OTH REF: 003

Card 2/2 *LC*

ACC NR: AP6019620 (A,N) SOURCE CODE: UR/0048/66/030/002/0285/0291

AUTHOR: Zelenskaya, N.S.; Smirnov, Yu.F.

ORG: Scientific Research Institute of Nuclear Physics, Moscow State University im. M.V.Lomonosov (Nauchno-issledovatel'skiy institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta)

TITLE: Energy spectra of the final nuclei in (p,2p) reactions on 1d-2s shell nuclei /Report, Fifteenth Annual Conference on Nuclear Spectroscopy and Nuclear Structure, held at Minsk, 25 January to 2 February 1965/

SOURCE: AN SSSR, Izvestiya. Seriya fizicheskaya, v. 30, no. 2, 1966, 285-291

TOPIC TAGS: nuclear reaction, ~~knockout reaction~~, Coriolis force, nuclear shell model, deformed nucleus, magnesium, aluminum, silicon, phosphorus

ABSTRACT: The authors have extended their earlier unified model calculations of quasi-elastic proton and deuteron knockout reactions on deformed 1d-2s shell nuclei (Izv. AN SSSR, 28, 1220 (1964)), to take into account the effect of rotational band mixing, i.e., of the coupling between the single-particle and rotational motions. The calculations were motivated by the appearance of the experimental excitation curves of G.Tibell, O.Sundberg, and R.U.Rengberg (Arkiv fys., 25, 443 (1964)) for the (p,2p) reactions on Mg^{24} , Al^{27} , Si^{28} and P^{31} which disagreed with the authors' earlier calculations in such a way as to suggest that rotational band mixing might be significant.

Card 1/2

L 41297-66

ACC NR: AP6019620

ficant. The calculations of A.K.Kerman (Kgl. danske vid. selskab. Mat.-fys. medd., 30, No. 15 (1956)) of the effect of Coriolis forces on the rotational level energies and the nuclear wave functions are employed to calculate the changes in the spectroscopic factors in the reduced widths, and these are employed to correct the earlier calculations of the excitation functions for the (p,2p) reactions on Mg^{24} , Al^{27} , Si^{28} , and P^{31} . Rather good agreement with experiment is achieved. The peculiar features of each of the reactions are discussed. It is concluded that the strong coupling scheme in its pure form cannot account for the features of (p,2p) reactions on deformed ld-2s shell nuclei, but that rotation band mixing must be taken into account. In the case of slightly deformed ld-2s shell nuclei, rotation band mixing due to Coriolis forces not only shifts the nuclear levels but also alters the probabilities for their excitation in (p,2p) reactions. By taking rotation band mixing into account, good agreement with the experimental data of Tibell, Sundberg, and Rensberg (loc.cit.) can be achieved. It is suggested that experimental data on the (p,2p) reactions on the lightest ld-2s shell nuclei (not heavier than Ne^{20}) as well as an analysis of the levels of those nuclei on the basis of the SU_3 scheme of J.P.Elliott (Proc.Roy.Soc., A, 245,128,562 (1958)) would be desirable. The authors thank V.G.Neudachin for discussions and valuable remarks. Orig. art. has: 4 formulas and 3 figures.

SUB CODE: 20 SUBM DATE: 00 ORIG. REF: 004 OTH REF: 010

Card 2/2 LC

L 3531-66 EPA(s)-2/EWT(m)/EWP(i)/EPF(n)-2/EWP(t)/EWP(h) JD/WH/JG
ACCESSION NR: AP5015454 UR/0166/65/000/003/0038/0044

AUTHORS: Yagudayev, A. M.; Zelenskaya, N. V.; Khalmuradov, R. S. 38
33
B

TITLE: Spatial distribution of atomic fluxes when metals are
evaporated by the spark-arc method

SOURCE: AN UzSSR. Izvestiya. Seriya fiziko-matematicheskikh nauk,
no. 3, 1965, 38-44

TOPIC TAGS: metal coating, metal vapor deposition, metal film

ABSTRACT: The spark-arc method for the evaporation of metals in
vacuum was described by the authors earlier (DAN UzSSR, 1964, no. 12).
The present study was undertaken to determine the distribution of the
metal produced by a single evaporation source, so as to permit an
ultimate arrangement of several sources in such a way that a thin
film of uniform thickness is produced. The experimental study con-
sisted of locating flat glass plates at various distances from the
evaporation center and determining the thickness distribution of the
deposited metal air by measuring its transparency. The experimental

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ACCESSION NR: AP5015454

setup and details of the installation and of the test measurements are briefly described. Formulas are derived for the determination of the total mass of metal deposited on the substrate and its distribution. Orig. art. has: 4 figures and 15 formulas

ASSOCIATION: Fiziko-tekhnicheskii institut AN UzSSR (Physicotechnical Institute, AN UzSSR) 44,55

SUBMITTED: 07Oct64

ENCL: 00

SUB CODE: IE

NR REF SOV: 003

OTHER: 004

Cord 2/2

YAGUDAYEV, A.M.; ZELENSKAYA, N.V.; KHALMURADOV, R.S.

Spatial distribution of atomic fluxes in the vaporization
of metals by the sparking-arc method. Izv. AN Uz.SSR.
Ser.fiz.-mat.nauk 9 no.3:38-44 '65.

(MIRA 1961)

1. Fiziko-tehnicheskii institut AN UzSSR. Submitted
October 7, 1964.

ZELENSKAYA, O. V.

ZELENSKAYA, O. V. "Use of Chloropicrin for Control of Clubroot of Cabbage in Protected Ground," Sad i Ogorod, no. 12, 1949, pp. 62-64. 60 S213

So; SIRA SI-90-53, 15 Dec. 1953

GAL'PERIN, M.Ya.; LEHEDINSKIY, A.P.; ZELENSKAYA, R.G.

Knock testing of automobile engines. Trudy lab.dvig. no.1:61-87
'55. (Automobiles--Engines) (MIRA 9:9)

PUCHKOV, N.G.; BOROVAYA, M.S.; ZELENSKAYA, R.O.

Operating properties of automobile motor oils from eastern sulfur-bearing crudes. Khim. i tekhn. topl. i masel. 3 no.8:1-9 Ag '58.

(MIRA 11:9)

(Lubrication and lubricants)

FUCHKOV, N.G.; BOROVAYA, M.S.; ZELENSKAYA, R.G.; BELYANCHIKOVA, G.P.

Performance of winter motor oils from eastern sulfur-bearing
crudes. Khim.i tekhn.topl.i masel 4 no.2:10-18 F '59.

(MIRA 12:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut po pererabotke
nefti i gaza i polucheniya iskusstvennogo topliya.
(Lubrication and lubricants--Testing)

SOV/65-58-8-1/14

AUTHORS: Puchkov, N. G; Borovaya, M. S. and Zelenskaya, R. G.

TITLE: Useful Properties of Lubricating Oils for Cars from Eastern Sulphur Petroleumsw (Ekspluatatsionnyye svoystva avtolor iz vostochnykh sernistykh neftey).

PERIODICAL: Khimiya i Tekhnologiya Topliv i Masel, 1958, Nr.8. pp. 1 - 9. (USSR).

ABSTRACT: During tests by the Novokuybyshevsk Petroleum Refinery (Novokuybyshevskiy neftepererabatyvayushchiy zavod) carried out by TSIATIM, VNIITneft, NAMI and VNII NP it was found that the properties of oils prepared according to Standard GOST 8581-57 are unsatisfactory. Detailed investigations were, therefore, carried out on the chemical composition and physico-chemical properties of these oils. From characteristics of these samples (Table 1), it can be seen that oils from sulphur petroleum differ from Baku petroleum by their low magnitudes of density and low refraction coefficients, but they have better viscosity-temperature properties, show low corrosion and a high tendency to lacquer formation. Data on the effect of the addition of various additives on the properties of lubricating oils NK NPZ was evaluated by laboratory methods (Table 2) in a Pinkevich apparatus. The smallest

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SOV/65-58-9-1/14

Useful Properties of Lubricating Oils for Cars from Eastern Sulphur
Petroleums.

anti-corrosive action was shown by the additive Paranoks and Tsiatim-339. The additive AzNII-4 and Santolube proved unsatisfactory. The additive DF-1 Paranoks and Santolube was most effective in reducing lacquer formation. Analogous data were obtained when determining the deterative properties according to PZV (GOST 5726-53). The oil NK-NPZ could not be tested on the engine GAZ-51 because of insufficient purification. Table 3: results of tests of oils on the engine GAZ-51 (time of test = 100 hours). As these laboratory analyses proved to be insufficient, pure and used oils were divided into hydrocarbon fractions (Tables 4, 5 and 6) and tested (Refs. 3, 4 and 5). A comparative evaluation of the chemical composition of these oils showed that after 150 hours of work the chemical group composition of the oils changed only to a slight extent. However, the viscosity of the aromatic fractions of the oils from Baku petroleum altered considerably. Some additional characteristics of the changes of the oils after 100 hours of work were obtained during the analysis of tars (Table 7) and during analysis of deposits on filters (Table 8). The lower degree of carbonisation

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SOV/65-58-9-1/14

Useful Properties of Lubricating Oils for Cars from Eastern Sulphur
Petroleums.

of oxidation products was less dependent on the chemical composition of the oils than on the presence of sulphur in the oil NK-MPZ. Further tests were carried out on the oxidation of five samples of oils under laboratory conditions (in the apparatus DK-2 NAMI) at 180^o, 200^o and 220^oC during fifty hours. The viscosity at 50^oC was determined every ten hours, as well as the quantity of insoluble deposits, tar and the amount of formed asphaltenes and hydroxy acids (Figs.1 - 4). Table 9: data on the content of sulphur in the oils. At high temperatures (220^oC and higher) the stability of Baku and Eastern oils equalises. Oxidation products of Eastern oils are less pure and contain a larger amount of tars, asphaltenes, hydroxy acids, but no carbene s or carboids. There are 9 Tables, 4 Figures and 5 References: 4 Soviet and 1 English.

1. Lubricating oils--Test results 2. Lubricant additives--Effective-
ness 3. Sulfur--Chemical effects

Card 3/3

ZELENSKAYA, R.G.

1

32531

S/065/62/000/001/002/002
E194/E135

11.9/100 also 1583

AUTHORS: Puchkov, N.G., Borovaya, M.S., Belyanchikov, G.P.,
Zelenskaya, R.G., and Severov, Ye.G.

TITLE: Service performance of basic lubricants refined in
different ways

PERIODICAL: Khimiya i tekhnologiya topliv i masel, no.1, 1962,
53-59 7/1

TEXT: Engine tests at the VNII NP showed that engine oils
derived from Eastern high sulphur crudes caused ring-sticking.
In this respect alone they were worse than Baku oils, being equal
or better in all other respects. Accordingly, a study was made
of hydrocarbon group and ring structure and other properties of
various lubricants before and after engine testing. Eastern and
Baku oils were found to be generally very similar but differ in
the content of sulphur compound and in hydrocarbon structure.
Because of their constitution Eastern oils oxidise to form
oxyacids and asphaltenes which promote ring sticking. Even
though the oil-resin contents of the initial base oils were

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E194/E135

Service performance of basic ...

similar, the oils from Eastern crudes produced more lacquer in the engine and in a laboratory oxidation test than did Baku oils. Oils deeply refined by solvent, acid or adsorbents were more stable, but whereas the Baku oils so refined deteriorated at a steady rate the Eastern oils displayed an induction period, being initially the more stable, but later oxidising more rapidly. Adsorption refining was particularly effective in improving the stability of the oils and reducing ring sticking with oils of Eastern crudes, giving satisfactory performance even without the use of additives. Work is in progress on hydrofined Eastern oils and preliminary indications are that this treatment gives somewhat higher VI than solvent treatment. However, hydrofined Eastern oils have inferior additive susceptibility, particularly to sulphonates, though their properties were much improved by additive ВНИИ НП-360 (VNII NP-360). Hydrofined oils with this additive behaved well in 100 and 600 hour gasoline engine tests and in 800 hour diesel engine tests. A simple comparison of certain physical properties of hydrofined Eastern oil with those of Essolube, and Shell Rimula oils, indicates that the Soviet

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Service performance of basic ...

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base oils can be as good as foreign ones. The need to match
additive to base oil is emphasised.
There are 5 figures, 9 tables and 4 Soviet-bloc references.

ASSOCIATION: VNII NP

Card 3/3

L 41031-56 EWT(M)/1 DJ

ACC NR: AP6018624 (A)

SOURCE CODE: UR/0065/66/000/006/0048/0052

AUTHOR: Grigor'yev, M. A.; Pimenov, A. M.; Zelenskaya, R. G.

ORG: NAMI, VNII NP

TITLE: Evaluation of service qualities of automotive oils by engine tests

SOURCE: Khimiya i tekhnologiya topliv i masel, no. 6, 1966, 48-52

TOPIC TAGS: lubricant, lubricating oil

ABSTRACT: In order to provide appropriate equipment for the testing of automotive motor oils in the Soviet Union the NAMI-1 test unit was developed and used at NAMI for comparative engine tests, evaluating the test results by the UIM-6 method, US method 344-T (USA Standard No. 691, March 1959), and also by the PZV method. The unit includes a single cylinder engine, corresponding to a section of engine ZIL-130. The unit permits rating of piston deposits, varnish, piston ring coking, wear of the cylinder-piston section, low-temperature deposits, and the oxidizability of oils and bearing corrosion. Lubricants type A, B, and C were rated, represented by oil AC-9⁵ with admixtures of 0.7, 0.7, and 0.25% additive Santolub 493, and of 0.7, 1.5, and 4% additive Monto 613, respectively. Standard gasoline A-76¹ was used in 100-hr runs. Method UIM-6 gave higher ratings for ring mobility than method 344-T, and the latter permitted a differentiation by points of piston grooves and seals, although the final results for both methods were similar. The types of deposit, however, may differently

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UDC: 665.521.5

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ACC NR: AP6018624

affect engine performance and correspond to different service properties of motor oils. Method 344-T is employed by various organizations in the Soviet Union and is widely used in other countries. Thus, an important modification of the method without suitable research is hardly expedient. Orig. art. has: 1 table and 1 figure.

SUB CODE: 11/ SUBM DATE: none/ OTH REF: 001

Card

2/2 *hh*

5.3300

78231

SOV/80-33-3-32/47

AUTHORS: Garber, Yu. N., Zelenevskaya, S. I., Rabukhina, G. G.

TITLE: Concerning the Azeotropic Rectification for the Separation of Isomers With Close Boiling Points (System m-Xylene-p-Xylene)

PERIODICAL: Zhurnal prikladnoy khimii, 1960, Vol 33, Nr 3, pp 694-700 (USSR)

ABSTRACT: The investigation of the phase equilibrium as well as the rectification of paraldehyde-m-xylene and paraldehyde-p-xylene systems showed that paraldehyde does not form azeotropes with either of the xylene isomers, and therefore cannot be used for the separation of the xylene isomers mixture. Similar study of 1,2-ethyl dibromide mixtures with xylene isomers showed that the former gives an azeotrope with p-xylene only. The azeotrope contains 92.5-95.0 molar % of 1,2-ethyl dibromide and its boiling point is 131.0° C. However, due to the low p-xylene content in the mixture of the

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Concerning the Azeotropic Rectification
for the Separation of Isomers With Close
Boiling Points (Systems m-Xylene-p-Xylene)

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SOV/80-33-3-32/47

isomers, 1,2-ethyl dibromide cannot be used as an
azeotropic agent for their separation. There are
4 tables; 6 figures; and 8 references, 2 U.S., 1 Belgian,
and 5 Soviet. The U.S. references are: D. F. Othmer,
Ind. Eng. Chem., Analyt. Ed., 4, 232 (1932); Ewell
and others, Petroleum Eng., 15, 255, 259, 319 (1944).

ASSOCIATION: Dnepropetrovsk Metallurgical Institute (Dnepropetrovskiy
metallurgicheskiy institut)

SUBMITTED: November 15, 1959

Card 2/2

ZHDANOV, Yu.A.; DOROFEYENKO, G.N.; ZELENSKAYA, S.V.

Thin-layer chromatography of carbohydrates on gypsum. Dokl. AN SSSR
149 no.6:1332-1333 Ap '63. (MIRA 16:7)

1, Rostovskiy-na-Donu gosudarstvennyy universitet. Predstavleno
akademikom M.M.Shemyakinym.
(Carbohydrates) (Chromatographic analysis)

ZELENSKAYA, T.M. [Zelens'ka, T.M.]

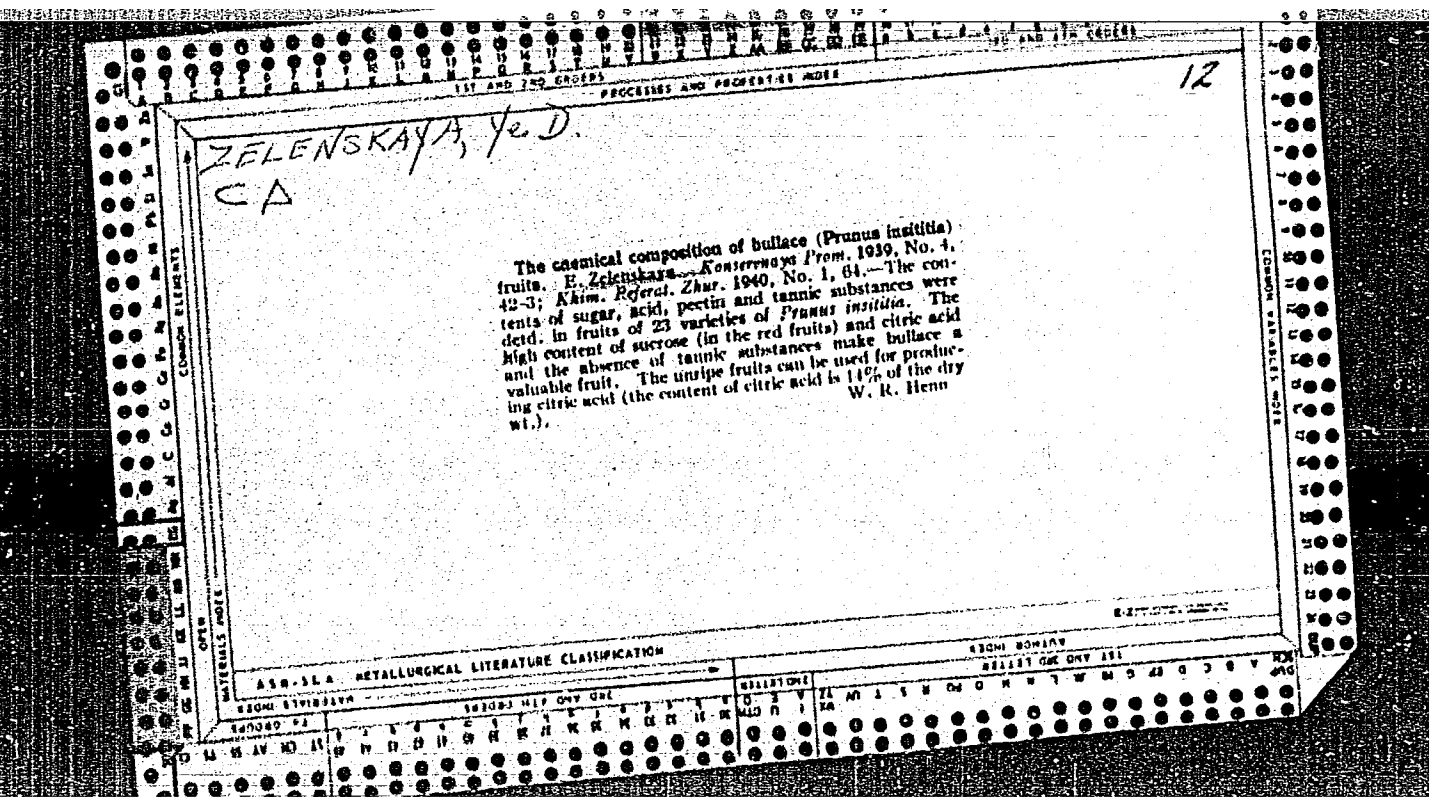
Morphological changes in the ovaries of white rats under the effect of large doses of antiovarian cytotoxic serum. Fiziol. zhur. [Ukr.] 11 no.6:816-819 N-D '65. (MIRA 19:1)

1. Laboratoriya izucheniya biologicheskii aktivnykh veshchestv
Instituta fiziologii im. Bogomol'tsa AN UkrSSR, Kiyev.

SOKOLOV, I.S.; ZELENSKAYA, V.M. (Krivoy Rog)

Diagnosis of congenital anomalies of the esophagus in the newborn.
Fel'd. 1 akush. 25 no.9:26-28 8 '60. (MIRA 13:9)

(ESOPHAGUS--ABNORMALITIES AND DEFORMITIES)
(INFANTS (NEWBORN)--DISEASES)



CA ZELENSKAYA, Ye. D.

1, p

The effect of pruning on the biological changes in apple trees. Ye. D. Zelenskaya. *Doklady Vsesoyuz. Akad. Nauk i Khim. Nauk im. V. I. Lenina* 14, No. 10, 41-4 (1940). Pruning causes an accumulation of sugars in the branches in the early stages of vegetation. This is brought about by an intensified hydrolysis of starch in the roots. In the middle of the summer the pruned trees contain more starch in the branches and in the fall more starch in the roots. I. S. Ioffe.

Ukr. Sci. Res. Inst. Productivity

1. YE. D. ZELENSKAYA
2. USSR (600)
4. Apple
7. Seasonal dynamics of ash constituents and nitrogen in various organs of young apple trees. YE. D. Zelenskaya. Dokl. Ak. sel(khoz. 18 no. 11. 1952.
9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

"APPROVED FOR RELEASE: 03/15/2001

CIA-RDP86-00513R001964230007-9

APPROVED FOR RELEASE: 03/15/2001

CIA-RDP86-00513R001964230007-9"

LEBECKA, Jolanta, mgr.; ZELENSKI, Andrzej, dr inż.

Isotopic methods of measuring the rate of wearing out of the
grinding elements of coal mills. Pt.2. Energetyka Pol 18 no.3:
Supplement: Energopomiar 10 no.2:9-10 Mr'64

ZELENSKI, Andrzej, dr inz.; IEBECKA, Jolanta, mgr

Isotopic method of measuring the degree of wear of the lining
of ball and ring pulverizing mills. Energetyka Pol 17 no. 7:
Supplement: Energopomiar 9 no. 4:21-26 J1 '63.

1. Dział Ciepłoty, Zakład Badaw i Pomiarów, Instytut Energetyki,
Warszawa.

LEBECKA, Jolanta, mgr; ZELENSKI, Andrzej, dr inz.

Isotopic measuring method of the wear of grinding elements
of coal mills. Pt. 1. Energetyka Pol 18 no. 1: Supplement:
energopomiar 10 no. 1: 7-8 Ja '64.

ZELENSKIY, A. [Zelens'kyi, A.]

"Ionized milk; its preparation and use for the feeding of infants."

Reviewed by A. Zelens'kyi. Ped., akush. i gin. 22 no.5:63 '60.

(MIRA 15:6)

(INFANTS--NUTRITION)
(MILK AS FOOD)

BA

11-G

The carbonic anhydrase of the blood of the newborn and its diagnostic significance. L. V. Redina and A. P. Zelenskii. *Abstrakter i psichol.* 1948, No. 1, 40-2; *Chem. Zentr.* (Russian Zone Ed.) 1949, I, 617.—The activity of the carbonic anhydrase (I) in the blood of sepsis patients is quite important diagnostically. A study was made of its significance in septic conditions in 85 infants 1-25 days old, 14 of which were born prematurely. In infants having local purulent conditions (mild pyoderma) the activity of the I was normal. As the purulent condition became generalized the activity of I decreased sharply. Such a sharp decrease was observed in pneumonia. The decline in the activity of I precedes recognizable clinical symptoms and therefore is of diagnostic importance. The activity of I is lower in healthy infants than in adults; it increases during the first days of life. It is especially low in premature infants. It is

lower in infants suffering from nutritional disorders than in those normally nourished. M. G. Moore

ZELENSKIY, A.F.

Zelenskiy, A. F. "Materials on the conditions of blood circulation in newborn infants," Trudy VI Vsesoyuz. s'yezda det. vrachey, posvyashch. pamyati prof. Filatova, Moscow, 1948, p. 423-28

SO: U-3264, 10 April 1953, (Letopis 'Zhurnal 'nykh Statoy, No. 3, 1949)

ZELENSKIY, A.F.

Functional peculiarities of the cardiovascular system in evaluation of general development of newborn. *Pediatrics*, Moskva No.6:13-19 Nov-Dec 51. (CML 21:4)

1. Of the Division for New-Born Infants (Head--A.F. Zelenskiy), Scientific-Research Institute of Obstetrics and Gynecology, Ministry of Public Health USSR (Director--L.G. Stepanov; Scientific Supervisor--Prof. K.N. Zhmakin).

ZELENSKIY, A. F., PANPULOV, M. S.

Blood - Pressure

Method of measuring arterial pressure of children. *Pediatrics* no. 2, March-April 1952.

Monthly List of Russian Accessions, Library of Congress, August, 1952. UNCLASSIFIED.

ZELENSKI (A.F.)
ZELENSKIY, A.F.

Influence of S.P.Botkin on the development of Soviet pediatrics;
on the 125th anniversary of his birth [with summary in English].
Pediatrics 36 no.1:80-85 Jan '58. (MIRA 11:2)

1. Iz kafedry detskikh bolezney (zav. A.F.Zelenskiy) Dnepropetrov-
skogo meditsinskogo instituta (dir. - prof. D.P.Chukhriyenko)
(BOTKIN, SERGEI PETROVICH, 1832-1889)
(PEDIATRICS)

ZELENSKIY, A.F. .

Some problems of further decrease in perinatal mortality.
Pediatria 41 [i.e. 42] no.2:25-28 F '63. (MIRA 16:4)

1. Iz kafedry detskikh bolezney (zav. A.F.Zelenskiy)
Dnepropetrovskogo meditsinskogo instituta.
(INFANTS--MORTALITY)

ZELENSKIY, A.F., prof. (Dnepropetrovsk)

Problems of antenatal prophylaxis. Zdravookhranenie 5 no.3:24-
29 My-Je '62. (MIRA 16:1)

(PRENATAL CARE)

ZELENSKIY, A.F.

Electoencephalography in neuroses in children. Vop.psikh.i nevr.
no.7:362-366 '61. (MIRA 15:8)

1. Kafedra nervnykh bolezney (zav. - prof. Ye.F.Davidenkova)
Leningradskogo pediatricheskogo meditsinskogo instituta (dir. -
prof. N.T.Shutova).
(NEUROSES) (ELECTROENCEPHALOGRAPHY)

MIKHAYLOV, O.V., kand. tekhn. nauk; ZHEREBTSOV, M.P., inzh.;
ZELENSKIY, A.G.

Effect of residual stresses resulting from welding on the
shrinkage of concrete in joints of precast columns. Prom.
stroi. 43 no.10:25-30 '65. (MIRA 18:11)

ZELENSKIY, A. F.

Historical stages in the development of the study of the newborn
infant. *Pediatrics* no.11:73-78 '61. (MIRA 14:12)

1. Iz kafedry detskikh bolezney (zav. - A. F. Zelenskiy) Dnepro-
petrovskogo meditsinskogo instituta (dir. N. Ya. Khoroshmanenko)

(INFANTS(NEWBORN) (PEDIATRICS)

MAZELEV, L.Ya., kand.tekhn.nauk; ZELENSKIY, A.I., kand.tekhn.nauk

Synthesis and investigation of the physicochemical properties
of alumina-rich and alaki-poor glasses. Sbor. nauch. trud.
Bel. politekh. inst. no.82:54-63 '60. (MIRA 15:5)
(Glass research)